

REMARKS

Present Status of Application

The Examiner is thanked for the thorough examination of this application. The Office Action, however, has tentatively rejected all claims 1-19, based on U.S. Patent 6,304,895 to Schneider et al. (hereafter Schneider). For at least the reasons set forth herein, Applicants respectfully traverse the rejections and request reconsideration and withdrawal of all rejected claims.

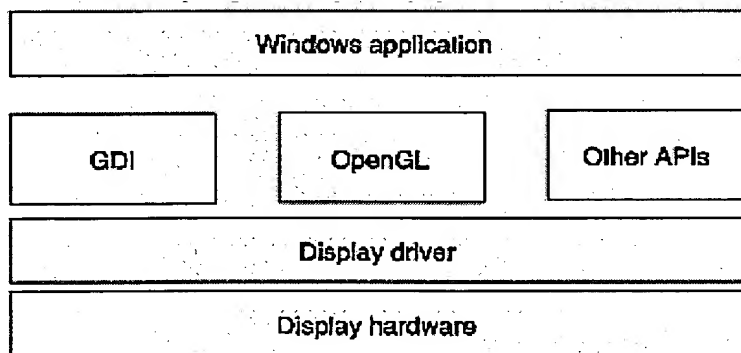
Discussion of Office Action Rejections

There are several significant distinctions between the invention defined in the independent claims of the present applications and the teachings of Schneider. For example, the claims define an apparatus and method that operate at the frame-buffer level. That is, the graphics information that is communicated across the network is graphics information from the frame buffer. In this regard, independent claim 1 defines “a *frame buffer memory*,” “a temporary memory [for storing] a *current frame* of graphics information,” “comparison logic for comparing a portion of the *current frame* ... previous frame,” and “transmission logic for transmitting the portion of the *current frame*...” Independent claims 14 and 16 also have language that defines their applicability to the frame buffer level.

In contrast to the communication of graphics information across a network, the teachings of Schneider are concerned with the control of a remote (or target) computer, wherein the graphics information that is transferred is transferred in the form of GDI calls. (“In general, the *present invention transmits a GDI representation of digitized video signals* as well as mouse and keyboard signals over a communication link.” Schneider col. 3, lines 29-32; “The *remote control software application 200 captures those GDI requests and*

retransmits them to the controlling computer.” Schneider col. 7, lines 2-5; “In the second embodiment, ... rather than using GDI calls to redraw the entire screen..., *the analyzing digitizer control applications 240 analyzes the captured image and used GDI calls to redraw* only changed blocks instead.” Schneider col. 7, lines 38-50; etc.)

As is well known, GDI calls are interpreted by display drivers and/or display hardware to render graphics primitives and/or objects. The generation and/or interpretation of GDI calls are outside the context of the frame buffer, and therefore outside the scope of embodiments of the invention, as claimed in the present application. To assist the Examiner, the undersigned provides the following drawing, which was obtained from an article entitled “Introduction to OpenGL on Windows” taken from the Web site maintained by the OpenGL organization (www.opengl.org). Specifically, the figure was obtained from: http://www.opengl.org/developers/documentation/OGL_userguide/OpenGLonWin-10.html)



As can be readily observed from the figure, and verified from a number of other publicly-available sources, GDI (is the original Windows 2D graphics interface) resides at the same “level” as OpenGL or other graphics APIs. Importantly, it does NOT reside at the level of

the frame buffer (within the display hardware), and as such, the teachings of Schneider cannot properly anticipate the claims of the present application.

For at least this reason the rejections are misplaced and should be withdrawn.

Claims 1-13

Turning now to the specific claim rejections, independent claim 1 (and dependent claims 2-13) was rejected under 35 U.S.C. § 102 as allegedly anticipated by Schneider. Applicants respectfully traverse this rejection.

Independent claim 1 recites:

1. An apparatus for communicating graphics across a network comprising:

a frame buffer memory for storing and maintaining at least a portion of a previous frame of graphics information, the graphics information being contained in a video signal;

a temporary memory configured to store at least a portion of a current frame of graphics information;

comparison logic for comparing a portion of the current frame of graphics information with a corresponding portion of the previous frame; and

transmission logic for transmitting the portion of the current frame to a destination computer, ***if the comparison logic determines that the portion of the current frame of graphics information differs from the corresponding portion of the previous frame by more than a predetermined measure.***

(*Emphasis added.*) Claim 1 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized (bold and italic) above.

As discussed above, the invention of claim 1 defines an apparatus that operates at the frame buffer level. In this regard, the apparatus has comparison logic that compares graphics information stored in a frame buffer memory. Simply stated, Schneider does not have this comparison logic. In addition, claim 1 calls for transmission logic that transmits a portion of a current frame (i.e., information from the frame buffer memory) to a remote computer. The

transmission to a remote computer (in order to control a target computer) of GDI calls (as taught by Schneider) is NOT the same, or the equivalent of, the transmission of data from a frame buffer memory. For at least this reason, claim 1 defines over the cited art.

Further, and as a separate and independent reason for the patentability of claim 1, claim 1 calls for the transmission logic to transmit the compared graphics information and transmits that information "if the comparison logic determines that the portion of the current frame of graphics information differs from the corresponding portion of the previous frame by more than a predetermined measure." Schneider teaches no such feature.

In fact, the Office Action (discussion spanning pages 2 and 3) only alleges that Schneider teaches the transmission of changed blocks (citing col. 8, lines 25-42). There is no teaching whatsoever in Schneider as to any threshold measure that triggers or limits the transmission. In this regard, Schneider teaches the transmission of each block if there is any detectable difference, whereas claim 1 specifically defines an apparatus that transmits frame buffer information to a remote computer "if the comparison logic determines that the portion of the current frame of graphics information differs from the corresponding portion of the previous frame *by more than a predetermined measure.*" For at least this additional reason, claim 1 defines over the cited art.

For at least the foregoing reasons, Applicants respectfully submit that the rejections of claim 1 are misplaced and should be withdrawn. The rejections of claims 2-13, which depend from claim 1, should be withdrawn for at least the same reasons. In addition, these claims define features that further define over the cited art. Simply stated, these additional features are not disclosed or taught in Schneider, and the rejections of these claims should be withdrawn.

Claims 14-15

Independent claim 14 (and dependent claim 15) was rejected under 35 U.S.C. § 102 as allegedly anticipated by Schneider. Applicants respectfully traverse this rejection.

Independent claim 14 recites:

14. An apparatus for displaying graphics information received from a remote computer and communicated across a network comprising:
*an input for receiving packetized graphics information; and
input logic configured to format and store a portion of a frame of graphics information received at the input into an appropriate location of a frame buffer memory, the portion being an amount less than the whole frame buffer.*

(*Emphasis added.*) Claim 14 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized (bold and italic) above.

Unfortunately, the Office Action did not provide separate and independent treatment of claim 14, but instead grouped it with claim 1 (setting forth only a single rejection for both claims). Notwithstanding, as described above, Schneider does operate at the frame buffer level and as such does not teach the “input logic” claimed by claim 14. In this regard, claim 14 defines input logic that is configured to receive packetized graphics information, then formats and stores that information in a portion of (and less than all) the frame buffer memory. Schneider appears to teach the receipt of GDI calls and the redrawing (re-rendering) of certain graphics information. However, Schneider wholly fails to teach the claimed feature of merely receiving and formatting graphics information to be directly stored in a frame buffer memory.

For at least this reason, Applicants respectfully submit that the rejection of claim 14 misplaced and should be withdrawn. The rejection of claim 15, which depends from claim 14, should be withdrawn for at least the same reasons.

Claims 16-19

Independent claim 16 (and dependent claims 17-19) was rejected under 35 U.S.C. § 102 as allegedly anticipated by Schneider. Applicants respectfully traverse this rejection.

Independent claim 16 recites:

16. A method for communicating graphics across a computer network comprising:
storing at least a portion of a frame of graphics information obtained from a video signal;
receiving at least a portion of a current frame of graphics information;
comparing a portion of the current frame of graphics information with a corresponding portion of the stored frame of graphics information;
if the compared portion of the current frame of graphics information differs by at least a predetermined amount from the corresponding portion of the stored graphics information, then transmitting the compared portion of the current frame of graphics information to a destination computer; and
if the compared portion of the current frame of graphics information differs by at least a predetermined amount from the corresponding portion of the stored graphics information, then overwriting the corresponding portion of the stored graphics information with the compared portion of the current frame of graphics information.

(*Emphasis added.*) Claim 16 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized (bold and italic) above.

Similar to the discussion above in connection with claim 1, the invention of claim 16 defines a method that operates at the frame buffer level. In this regard, the method compares graphics information stored in a frame buffer memory. Simply stated, Schneider does not have or teach such a comparison step. In addition, claim 16 calls for the transmission of a portion of a current frame (i.e., information from the frame buffer memory) to a remote computer. The transmission to a remote computer (in order to control a target computer) of

GDI calls (as taught by Schneider) is NOT the same, or the equivalent of, the transmission of data from a frame buffer memory. For at least this reason, claim 16 defines over the cited art.

Further, and as a separate and independent reason for the patentability of claim 16, claim 16 calls for the transmission of the compared graphics information "***if the compared portion of the current frame of graphics information differs by at least a predetermined amount from the corresponding portion of the stored graphics information.***" As discussed in connection with claim 1, Schneider teaches no such feature.


For the foregoing reasons, Applicants respectfully submit that the rejections of claim 16 are misplaced and should be withdrawn. The rejections of claims 17-19, which depend from claim 16, should be withdrawn for at least the same reasons.

CONCLUSION

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

No fee is believed to be due in connection with this response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to Hewlett-Packard Company's deposit account No. 08-2025.

Respectfully submitted,

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Please continue to send all future correspondence to:

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